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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,384	10/16/2003	Muqtada Husain	10541-1868	2103
29074	7590	02/13/2006	EXAMINER	
VISTEON C/O BRINKS HOFER GILSON & LIONE PO BOX 10395 CHICAGO, IL 60610			LUM VANNUCCI, LEE SIN YEE	
			ART UNIT	PAPER NUMBER
			3611	

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/687,384	Applicant(s) HUSAIN, MUQTADA	
	Examiner Lee Lum	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10 and 21-24 is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-20, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A Request for Reconsideration was filed 7/11/05 in which Claims 25 and 26 were also added.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 15-17, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohner et al 6220385.

Bohner discloses a system for providing an end-of-travel feedback from a road wheel to a driver of a vehicle, the vehicle having a steer-by-wire system, the system comprising

Steering mechanism including steering wheel 10, steering shaft 9, and linkage including elements 3 and 4,

Clutch 6 coupling the steering shaft with the road wheel (c5, ln 7-11) when the road wheel is at an end-of-travel position, as well as any inclusive position, and,

Controller 28 determining when the road wheel has reached the end-of-travel position (as well as any inclusive position), via steering shaft sensor 13, and road wheel angle sensor 14, and engages the clutch in response.

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. **Claims 4 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Serizawa et al 5347458.

Bohner does not disclose the control of the clutch as actuated based on a rate of change of the road wheel angle, while Serizawa shows this sensor in c4, ln 10-11. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Serizawa, to increase control over the steering linkage, via this data, thus increase handling and safety.

B. **Claims 5, 6, 12, 19 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Andonian et al 6681881.

Re **Claims 5 and 19**, Bohner does not disclose the wheels as controlled by motors, while Andonian shows these extremely well-known components 20, 26. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include these elements, as shown in Bohner, as a well-known feature in a steer-by-wire system providing control over the road wheels, thus increasing performance and efficiency of this type of system.

Re **Claims 6, 12 and 20**, Bohner does not disclose the engagement of the clutch based on the current draw of the motor, while Andonian shows this arrangement with motors 20, 26, including a current sensor (c2, ln 50-52). It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Andonian, to provide additional data by which to operate the wheel motors, thus increase its proper function, and operational life, as well as increase passenger safety.

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C. **Claims 11 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Dilger et al 6219604.

Re **Claim 11**, Bohner does not disclose a restriction of the road wheel via a sensor, while Dilger shows a similar steering system including

A sensor/mechanism (unidentified) in c7, ln 7-10 that detects a restricted road wheel.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Dilger, to further increase the accuracy of the steer-by-wire system via detection, and resolution, of this particular travel condition, thus maximize safety and comfort.

Re **Claim 13**, Bohner discloses a road wheel angle sensor as discussed above.

D. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohner in view of Dilger, and in further view of Serizawa.

The previous references do not disclose the clutch as actuated based on the road wheel angle, while Serizawa shows this sensor as previously discussed in paragraph A. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Serizawa, to increase control over the steering linkage, via this data, thus increase handling and safety.

4. **Claims 7-10 and 21-24 are allowable.** Prior art does not disclose the system described above further comprising, *inter alia*, the controller disengaging the clutch when the steering wheel is rotated away from the end-of-travel position.

6. RESPONSE TO REMARKS

Examiner reiterates her rejections of Claims 1-6, 11-20, 25 and 25, with Bohner obviating most claims. The reference clearly provides "a clutch coupling the steering shaft with the road wheel based on an end-of-travel condition", and similar language in subsequent claims, where the clutch is coupled at this specific condition, as well as all inclusive conditions, as disclosed in c5, ln 5-14.

Applicant is asked to note allowable subject matter.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

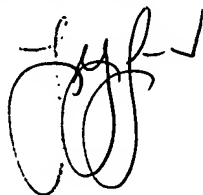
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


8. Communication with USPTO/Examiner

Any inquiry concerning this communication, or others, should be directed to Ms. Lum at 571 272-6649, M-F, 9-6. If attempts to reach the examiner are unsuccessful, her supervisor, Ms. Lesley Morris is at 571 272-6651. Our fax number is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications: private PAIR only, for published applications: private or public PAIR. For more information re PAIR: <http://pair-direct.uspto.gov>. Questions re private PAIR: contact the Electronic Business Center (EBC) at 866 217-9197.

Ms. Lee S. Lum
Examiner
1/31/05




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